

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA
NORFOLK DIVISION**

CENTRIPETAL NETWORKS, LLC,

Plaintiff,

V.

PALO ALTO NETWORKS, INC.,

Defendant.

No. 2:21-cv-00137-EWH-LRL

REDACTED - PUBLIC VERSION

**PLAINTIFF CENTRIPETAL NETWORKS, LLC’S OPPOSITION TO DEFENDANT’S
RENEWED AND ADDITIONAL MOTION FOR JUDGMENT AS A MATTER OF LAW**

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	ARGUMENT	1
A.	The Correlation Patents Are Patentable	1
1.	The claims of the Correlation Patents are not abstract.	2
2.	The claims of the Correlation Patents recite inventive concepts that were not well-understood, routine, and conventional at the time of the invention.....	7
B.	PAN Directly Infringes the Correlation Patents	9
C.	PAN Directly Infringes Claim 8 of the '437 Patent.....	13
D.	PAN Infringes the Asserted Method Claims and Foreign Sales are Properly Included in the Royalty Base	14
E.	PAN Infringes the Asserted Apparatus Claims	15
F.	Centripetal Presented Substantial Evidence to Include Foreign Sales in Damages.....	15
G.	Centripetal Presented Substantial Evidence to Support Reasonable Royalties	16
1.	The Keysight License is comparable to the hypothetical negotiation for a reasonable royalty of damages.	16
2.	Centripetal presented a reasonable royalty properly apportioned to the value of the inventions of the Asserted Patents in the infringing combinations of Accused Products.	19
III.	CONCLUSION.....	20

TABLE OF AUTHORITIES

	Page(s)
Cases	
<i>Alice Corp. v. CLS Bank Int’l</i> , 573 U.S. 208 (2014).....	2, 3, 7
<i>Ancora Techs. Inc. v. HTC Am., Inc.</i> , 908 F.3d 1343 (Fed. Cir. 2018).....	4
<i>Arendi S.A.R.L. v. LG Elecs., Inc.</i> , No. 12-1595-LPS, 2020 U.S. Dist. LEXIS 167 (D. Del. Jan. 2, 2020)	9
<i>BASCOM Glob. Internet Servs., Inc. v. AT&T Mobility LLC</i> , 827 F.3d 1341 (Fed. Cir. 2016).....	7
<i>Berkheimer v. HP Inc.</i> , 881 F.3d 1360 (Fed. Cir. 2018).....	1
<i>Bio-Rad Laby’s, Inc. v. 10X Genomics Inc.</i> , 967 F.3d 1353 (Fed. Cir. 2020).....	16
<i>Carnegie Mellon Univ. v. Marvell Tech. Grp., Ltd.</i> , 807 F.3d 1283 (Fed. Cir. 2015).....	15
<i>Certain Computer Network Security Equipment</i> , No. 337-TA-1314, 2023 WL 5744218 (U.S.I.T.C. Aug. 8, 2023)	6
<i>Commw. Sci. & Indus. Rsch. Org. v. Cisco Sys., Inc.</i> , 809 F.3d 1295 (Fed. Cir. 2015).....	20
<i>Cronos Techs., LLC v. Expedia, Inc.</i> , No. 13-1538-LPS, 2015 WL 5234040 (D. Del. Sept. 8, 2015)	2
<i>Elbit Sys. Land & C4I Ltd. v. Hughes Network Sys., LLC</i> , 927 F.3d 1292 (Fed. Cir. 2019).....	20
<i>Enfish, LLC v. Microsoft Corp.</i> , 822 F.3d 1327 (Fed. Cir. 2016).....	3
<i>Finjan, Inc. v. Blue Coat Sys., Inc.</i> , 879 F.3d 1299 (Fed. Cir. 2018).....	5
<i>Invitae Corp. v. Natera, Inc.</i> , No. 21-669-LPS, 2021 WL 7209516 (D. Del. Nov. 30, 2021).....	2

<i>KCJ Corp. v. Kinetic Concepts, Inc.</i> , 223 F.3d 1351 (Fed. Cir. 2000).....	12
<i>Mentone Solutions LLC v. Digi Int’l Inc.</i> , No. 2021-1202, 2021 WL 5291802 (Fed. Cir. Nov. 15, 2021)	2
<i>Packet Intelligence LLC v. NetScout Sys., Inc.</i> , 965 F.3d 1299 (Fed. Cir. 2020).....	6
<i>Prism Techs. LLC v. Sprint Spectrum L.P.</i> , 849 F.3d 1360 (Fed. Cir. 2017).....	18
<i>R.R. Dynamics, Inc. v. A. Stucki Co.</i> , 727 F.2d 1506 (Fed. Cir. 1984).....	15
<i>Reeves v. Sanderson Plumbing Prods., Inc.</i> , 530 U.S. 133 (2000).....	1
<i>Salazar v. AT&T Mobility LLC</i> , 64 F.4th 1311 (Fed. Cir. 2023)	12
<i>SRI Int’l, Inc. v. Cisco Sys., Inc.</i> , 930 F.3d 1295 (Fed. Cir. 2019).....	3, 4, 5
<i>Tex. Instruments Inc. v. Cypress Semiconductor Corp.</i> , 90 F.3d 1558 (Fed. Cir. 1996).....	7
<i>Vectura Ltd. v. Glaxosmithkline LLC</i> , 981 F.3d 1030 (Fed. Cir. 2020).....	16

Statutes

35 U.S.C. § 101.....	1, 9
35 U.S.C. § 282.....	1

Other Authorities

Fed. R. Civ. P. 50(a)	1
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I. INTRODUCTION

Centripetal Networks, LLC (“Centripetal”) presented substantial evidence to support its claims of direct and indirect infringement of Centripetal’s U.S. Patent Nos. 10,567,437 (“’437 Patent”), 10,530,903 (“’903 Patent”), 10,931,797 (“’797 Patent”), and 10,659,573 (“’573 Patent”) (collectively, “Asserted Patents”) and damages. The substantial evidence includes sworn trial testimony from numerous fact and expert witnesses, deposition testimony of Palo Alto Networks Inc.’s (“PAN”) employees, source code, testing of the accused products, and numerous PAN and Centripetal documents that were admitted into evidence. PAN disagrees with the evidence that Centripetal presented in its case, but its disagreement is not enough to prove that “as a matter of law” Centripetal did not present sufficient evidence to support its claims.

In addition, PAN failed to present sufficient evidence to support its ineligibility theories. Notwithstanding the burden belonging to PAN, Centripetal presented substantial evidence that the claims of the ’903, ’797, and ’573 Patents (“Correlation Patents”) are patentable. Under Federal Rule of Civil Procedure Rule 50(a), when all reasonable inferences are drawn in Centripetal’s favor, the Court should deny PAN’s renewed and additional motion for judgment as a matter of law (Dkt. No. 849, “Motion”). Fed. R. Civ. P. 50(a); *Reeves v. Sanderson Plumbing Prods., Inc.*, 530 U.S. 133, 150 (2000).

II. ARGUMENT

A. The Correlation Patents Are Patentable

PAN failed to carry its heavy burden of proving, through legally sufficient clear and convincing evidence, that the asserted claims of the Correlation Patents are patent ineligible under 35 U.S.C. § 101. *See* 35 U.S.C. § 282 (claims of a patent are presumed valid); *see also Berkheimer v. HP Inc.*, 881 F.3d 1360, 1368-69 (Fed. Cir. 2018) (facts underlying a finding of patent ineligibility must be proven by the challenging party by clear and convincing evidence).

1. The claims of the Correlation Patents are not abstract.

In order to satisfy *Alice* Step One, courts have required that the alleged infringer identify an abstract idea that is tethered to the claims. *Mentone Solutions LLC v. Digi Int'l Inc.*, No. 2021-1202, 2021 WL 5291802, at *6 (Fed. Cir. Nov. 15, 2021) (holding the abstract idea was “untethered to the invention as claimed” and the claims were found to therefore be patent eligible); *Invitae Corp. v. Natera, Inc.*, No. 21-669-LPS, 2021 WL 7209516, at *7-8 (D. Del. Nov. 30, 2021) (collecting cases discussing “[t]he importance of fairly stating an abstract idea to which the claims are allegedly directed is clear from many decisions of the Supreme Court and the Federal Circuit.”). PAN fails to meet this most basic requirement.

PAN’s assertion that the claims of the Correlation Patents are directed to the ineligible abstract idea of collecting information, analyzing it, and communicating the results is an oversimplification of the claims. Motion at 2-3. PAN fails to recognize that the asserted claims of the Correlation Patents are directed to network security devices that operate at the packet level and perform different tasks in each of the patents. Further, PAN improperly lumps all the claims of the three Correlation Patents into the same overgeneralized idea without establishing that any one claim is representative of the rest. *Cronos Techs., LLC v. Expedia, Inc.*, No. 13-1538-LPS, 2015 WL 5234040, at *3 (D. Del. Sept. 8, 2015) (“Defendants must provide at least some meaningful analysis for each of the challenged claims.”) (emphasis omitted). The ’903 Patent claim, for example, details analyzing a particular type of data (packets) that travel from particular computers and networks (hosts in two networks). JX-3 (’903 Patent) at 5:24-49, Claim 10. Further, PAN’s purported abstract idea does not account for the ’903 Patent claim’s requirement for the generation of specific data in the form of log entries with timestamps and indications of hosts, among other items of data generated. JX-3 at Fig. 4, 8:34-9:44, Claim 10; Trial Tr. 1770:23-1771:14. Similarly, PAN’s purported abstract idea does not account for the limitations

specific to the '573 or '797 Patent claims, including rules that are used to identify hosts in a first network, the provisioning of a packet-filtering device, or the generation of log entries that correspond to encrypted traffic ('573 Patent only). JX-5 ('573 Patent) at Fig. 4, 5:52-6:6, Claims 1, 9; JX-4 ('797 Patent) at Fig. 4, 6:41-54, 12:63-13:40, Claims 1, 12, 17; Trial Tr. 1772:9-24, 1773:8-19. Because PAN's articulation of an abstract idea does not account for these key limitations, it is not a fair characterization of the claims.

Further, the claims of the Correlation Patents are directed to an improvement in computer functionality and aim to address specific solutions to a technological problem, rendering them patent eligible. At *Alice* Step One, there is a determination as to whether the “focus of the claims is on [a] specific asserted improvement in computer capabilities . . . or, instead, on a process that qualifies as an ‘abstract idea’ for which computers are invoked merely as a tool.” *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335-36 (Fed. Cir. 2016). Here, there can be no question that the focus of the claims is on a specific improvement in computer capabilities. The claims of the Correlation Patents do not invoke computers merely as a tool for some task; rather the claims are for enhancing network security devices and protecting the integrity of the computer network so it can operate efficiently.¹

Indeed, the Federal Circuit has found on multiple occasions that protecting computers and networks improves the operation of computers and is, thus, patent eligible. In *SRI*, the

¹ PAN mischaracterizes the testimony of Dr. Cole. Motion at 3 n.4. Dr. Cole's testimony was in response to the question whether “generating the rules as a result of correlation [is] a type of machine learning” and Dr. Cole testified that the generating “absolutely fits under the concept of artificial intelligence.” Trial Tr. 625:22-626:7. Machine learning/artificial intelligence are not akin to “automation” of a human process, and in fact, performs tasks that are impossible for a human to perform. Motion at 3 n.4. Further, PAN ignores that Dr. Cole additionally testified that “there is no way a human could ever go through all [of the log entries]” that are generated in a network. Trial Tr. 626:8-25.

Federal Circuit held that a patent that identifies a disjointed connection flow in a network environment was patent eligible. *SRI Int'l, Inc. v. Cisco Sys., Inc.*, 930 F.3d 1295, 1302-04 (Fed. Cir. 2019). The Correlation Patents go even further and use different correlation techniques to identify disjointed connection flows to generate rules which identify hosts. In *Ancora Techs. Inc. v. HTC Am., Inc.*, the Federal Circuit found that providing security to a computer by limiting a computer's ability to run unauthorized software was directed to a non-abstract idea because it increased security. 908 F.3d 1343, 1348-49 (Fed. Cir. 2018). It held that the claim "addresses a technological problem with computers: vulnerability of license-authorization software to hacking." *Id.* at 1349. It also found that the claim was not abstract because it was directed to "[i]mproving security" by "a specific technique that departs from earlier approaches." *Id.* at 1348 (citation omitted). Similarly, Centripetal's patents claim techniques that depart from earlier approaches. For example, the Correlation Patents use a specific configuration and analysis technique to identify infected computers and generate data, e.g. rules, to directly address this issue, thus improving computer functionality. *See, e.g.*, Trial Tr. 1768:1-13 (Dr. Goodrich testifying that "[r]esponding to correlation improves the time you can identify a malicious host and generate security rules Hence, this improves the functionality of all computers in a protected network[.]"); 1767:6-16 (actionable correlation means "[y]ou can respond to the correlation, and then that response allows you to identify a malicious host, generate rules, that then can deal with such malicious activities."); 322:17-323:14. Further, the claims of the Correlation Patents require specialized equipment and "can't be used in a general purpose computer." Trial Tr. 446:23-447:3, 448:1-450:23, 1755:1-1756:1, 1768:21-1770:2.

Centripetal's inventions improve computers through enhanced cybersecurity. Trial Tr. 450:15-23. The Correlation Patents improve a variety of types of computers, such as network

and packet-filtering devices, with the ability to identify and block compromised hosts with newly generated rules. *See, e.g.*, JX-5 ('573 Patent) at 1:23-32, 13:19-38; Trial Tr. 447:20-450:23.

Analogous to the technology in *SRI*, the claims of the Correlation Patents are not directed to any type of “known business practice,” but rather are directed to a security improvement for the network of “identifying hackers or potential intruders into the network,” which are not abstract. 930 F.3d at 1303. Further, the claim in *Finjan, Inc. v. Blue Coat Sys., Inc.* provided protection from compromised computers by generating new sets of data that allow a computer to do things it could not do before, similar to the Correlation Patent claims, which is not abstract. 879 F.3d 1299, 1304-05 (Fed. Cir. 2018).

Furthermore, PAN’s assertion that the claims of the Correlation Patents have a “functional character” and are “results-focused” is without merit. The Correlation Patents provide detailed claims with concrete descriptions on how to protect specific vulnerabilities in a network, namely, when needed to identify a specific host that is associated with malicious activity. *See, e.g.*, JX-5 at 1:24-32 (describing need to identify specific hosts), 13:19-38 (describing need to promulgate rules to stop malware spread). Further, the '573 Patent claims require logs to be generated based on specific types (i.e. encrypted) of packets. JX-5 at 5:52-6:6, Claims 1, 9. They also require a particular type of correlation in order for rules to be generated. *Id.* at Claims 1, 9. Once the rules are generated, the claims require the concrete result that a packet-filtering device is provisioned with the rules. *Id.* at 12:59-13:38, 14:1-24, Claims 1, 9.

The '797 Patent includes additional limitations and a different implementation for processing packets in a particular configuration, as well as provisioning a packet-filtering device with rules, that can be used to provide security enforcement to protect against the spread of malware. JX-4 at Claims 1, 12, 17. The '797 Patent claims include specific requirements for

collecting specific groups of packets, performing the specific operation of correlating the specific data that was collected, using this information to create a response rule to identify a computer, and then actually using this rule in a packet-filtering device on the network. *Id.* Again, this type of specific security functionality which is defined in the patent claim is not abstract because it shows a specific configuration that addresses a cyber security problem. JX-4 at 1:27-36.

The '903 Patent includes additional specific limitations. The '903 Patent claims detail specific requirements for identifying packets from two hosts communicating from two different networks, logging timestamp data for these packets, and using this information to generate an indication of a host. JX-3 at Claim 10. The claims also include specific and detailed requirements on how time stamps are used for the correlation. For example, the “determine . . .” requires “for each transmission timestamp, calculate the amount of time between at least one packet transmission time indicated by transmission timestamps and at least one packet receipt time indicated by receipt timestamps.” Dkt. No. 419-1; JX-3 at Claim 10. These specific details on how the system is implemented further demonstrate that the patent claims are not abstract.

In *Packet Intelligence LLC v. NetScout Sys., Inc.*, the Federal Circuit confirmed the patent eligibility of claims which recite computer components that perform the operations of “extracting, storing, and comparing unspecified ‘identifying information’ in order to ‘classify’ data packets by flow.” 965 F.3d 1299, 1309-10, 1317 (Fed. Cir. 2020). The claims of the Correlation Patents similarly provide a specific system allowing for the identification of infected computers on a company’s network utilizing specific network components, as well as improving the device in order to identify compromised hosts. *See, e.g.*, Trial Tr. 1768:1-13.

PAN’s reliance on the ITC’s non-binding determination, with a different trial record, that a related patent is ineligible should be ignored. *Certain Computer Network Security Equipment*,

No. 337-TA-1314, 2023 WL 5744218, at *74-75 (U.S.I.T.C. Aug. 8, 2023); *Tex. Instruments Inc. v. Cypress Semiconductor Corp.*, 90 F.3d 1558, 1569 (Fed. Cir. 1996) (ITC’s findings not “binding interpretations of the U.S. patent laws” and thus, do “not have res judicata or collateral estoppel effect” in district court) (citation omitted). The determination, which is under appeal, contains several fundamental errors. First, it does not consider the claims as a whole, as required by Federal Circuit precedent and explained above, and improperly ignored the entire inventive concept in the claims, as well as the specific details therein. Next, it ignores that the claims are directed to computer and network security, despite the context of the claims, testimony from Dr. Goodrich, and support from the specification that they are directed to that patent eligible purpose. Additionally, the ALJ committed reversible error in accepting an abstract idea that was not tethered to the claims and ignored the fact that the claims are rooted in computer security, which the Federal Circuit has repeatedly found is patentable subject matter, as explained in detail above. The claims of the Correlation Patents are thus not directed to an abstract idea.

2. The claims of the Correlation Patents recite inventive concepts that were not well-understood, routine, and conventional at the time of the invention.

PAN further failed to show that the asserted claims lack an inventive concept under *Alice* Step Two. *Alice Corp. v. CLS Bank Int’l*, 573 U.S. 208, 217 (2014). When analyzing inventive concept under Step Two, the Supreme Court requires examination of each claim element individually and “as an ordered combination” of elements. *Id.* “[A]n inventive concept can be found in the non-conventional and non-generic arrangement of known, conventional pieces.” *BASCOM Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1350 (Fed. Cir. 2016).

As explained in Centripetal’s Motion for Judgment as a Matter of Law, PAN’s entire patent eligibility defense relies upon the unsupported testimony of Dr. Nielson. Dkt. No. 843 at

2-3. However, Dr. Nielson failed to do a proper analysis in addressing each claim element individually and as an ordered combination of elements. Trial Tr. 1580:15-1591:15. Dr. Nielson's analysis was conclusory and based on word matching instead of providing any analysis. For example, he pointed to words such as "timestamp" in the literature, but failed to address the specific claim language, which requires different timestamps, calculating the differences, log entries, and correlating the data. Trial Tr. 1587:18-1588:18. Analyzing bits and pieces of individual claim elements is insufficient to prove Step Two by clear and convincing evidence. Dr. Nielson did not even address whether the claims, as an ordered combination, are "conventional, routine, and well-understood" other than in summary and conclusory fashion. Trial Tr. 1591:23-1593:9. Indeed, he failed to identify any reference that taught an action taken "responsive to" or "based on" the claimed correlation. Trial Tr. 1767:17-1768:20.

Centripetal, on the other hand, presented evidence that the asserted claims are patent eligible, including the testimony of Dr. Goodrich who relied on evidence including DX-552 (McDonald), DX-542 (Ivershen), and DX-579 (Deschenes), as well as the testimony of Centripetal's witnesses David Ahn and Jonathan Rogers, to opine that the asserted claims were not "conventional, routine, and well-understood" at the time of the invention. Trial Tr. 441:18-442:24, 445:11-446:22 (Ahn testifying that the technology of the Correlation Patents was a unique solution in 2015 because "we were ahead of the curve, we saw the problem before it became an industry-wide problem."), 446:23-447:3 (Ahn testifying that the Correlation Patents use specialized equipment), 447:13-19 (Ahn testifying that "[n]obody had the technology. It was not well-known at all. [Centripetal] created the technology."), 1755:1-1756:11 (J. Rogers testifying that Centripetal's technologies require "entirely purpose-built, custom hardware[.]"), 1766:12-1774:9, 1774:10-1777:8. This fact testimony alone is sufficient to deny PAN's Motion.

Further, PAN's assertion that "testimony is insufficient to support a finding that the 'additional elements' of the claims were *not* well-understood, routine, or conventional" is without merit. Motion at 7. First, as discussed above, the claims of the Correlation Patents are not directed to abstract ideas such that PAN's arguments regarding "additional elements" are irrelevant. Second, PAN incorrectly puts the burden on Centripetal, but it is PAN's burden to present clear and convincing evidence that the claim elements, taken individually and as an ordered combination, *are* well-understood, routine, or conventional, which it did not. Indeed, PAN cites no testimony that can rebut the testimony of Centripetal's witnesses that the claims were not well-understood, routine, or conventional. *Id.* Nor did PAN present any evidence regarding preemption, further supporting the patentability of the claims. *Arendi S.A.R.L. v. LG Elecs., Inc.*, No. 12-1595-LPS, 2020 U.S. Dist. LEXIS 167, at *11 (D. Del. Jan. 2, 2020).

Thus, PAN failed to present a legally sufficient evidentiary basis such that a reasonable jury could find in its favor on the factual questions underlying Step Two of §101 eligibility.

B. PAN Directly Infringes the Correlation Patents²

Centripetal provided overwhelming evidence that the accused products directly infringe the '903, '573, and '797 Patents. *See, e.g.*, Dkt. No. 843 at 3-9 (citing evidence including testimony, source code, public and internal documents); Dkt. No. 825 at 1-4 (same). In its Motion, PAN fails to rebut the underlying evidence, instead making irrelevant arguments and/or ignoring the underlying evidence that directly contradicts its position. Motion at 10-12.

Centripetal provided evidence that the NGFWs with ACE and the Cortex Products

² Centripetal incorporates by reference its prior briefing regarding PAN's induced infringement of Claim 1 of the '573 and '797 Patents. *See, e.g.*, Dkt. No. 843 at 9; Dkt. No. 825 at 8-9.

See, e.g., Trial Tr. 557:18-567:3, 618:19-624:4; PX-361, 364, 393, 400. Instead of addressing the evidence, PAN makes the irrelevant argument that it has “no need to perform the claimed correlation” because it already “match[es] up what already arrived grouped together in a single record” citing the testimony of Mr. Zuk and Dr. Villasenor. Motion at 10-11. However, this argument is easily dismissed because it ignores the functionality accused of infringement which is the identification of a host and generation of a rule using Automated Correlation Engine (“ACE”) and the Cortex Products. Indeed, PAN fails to show evidence that ACE and Cortex does not perform the claimed correlation and fails to explain why its products introduced the infringing technology if its products already had it before. Trial Tr. 802:10-803:9 (Dr. Cole noting that PAN’s argument fails because it would not add ACE in its products if it did the claimed functionality), 1354:24-1355:2, 1357:6-11 (Mr. Zuk testifying that ACE was added to the NGFWs after the Correlation Patents were filed). Importantly, PAN ignores that Dr. Villasenor admitted at trial that the accused products perform correlation with ACE (for NGFWs with ACE) and log stitching (for Cortex products) to generate an indication of a host and generates rules, and that those functionalities are different from traditional NAT translation. Trial Tr. 1468:24-1469:4, 1478:24-1479:22 (admitting that the Cortex products correlate log entries), 1471:21-1472:4 (admitting that ACE correlates), 1482:3-10 (Dr. Villasenor admitting that the NAT functionality is different from ACE functionality). Accordingly, PAN’s

³ For the ’903 Patent, Centripetal provided evidence that [REDACTED] Trial Tr. 570:13-577:2; PX-393-394, 400.

argument is unsupported and fails to dispute infringement of the asserted claims.

Despite the trial record, PAN makes the factual dispute that the correlation is not the impetus for “identifying ‘the first host.’” Motion at 10-11. As an initial matter, PAN misstates the claim language as the asserted claims require either generating and transmitting an indication of a first host or generating and provisioning a rule identifying packets from a first host responsive to or based on the correlation, not merely “identifying a first host.” *See* JX-3 (’903 Patent) at Claim 10; JX-5 (’573 Patent) Claims 1, 9; JX-4 (’797 Patent) at Claims 1, 12, 17. Further, Dr. Cole testified that the claimed correlation was the impetus for generating an indication of a first host or for generating and provisioning rules which demonstrates that identified functionality occurred in response to or based on the correlation operation. Trial Tr. 269:1-270:3, 577:3-580:16, 581:8-584:9, 592:10-14, 600:25-634:15, 1773:8-19, 1774:25-1776:24. Indeed, Dr. Villasenor admitted that the accused products identify a first host and generate rules based on ACE and log stitching. Trial Tr. 1482:11-25 (admitting that ACE identifies hosts and generates rules), 1469:17-19 (admitting that the Cortex products generate rules based on correlated logs). While PAN attempts to distort the facts by arguing that it knows the host the entire time, it fails to rebut the fact that ACE’s and Cortex’s correlation is the impetus to generating an indication of the first host or generate and provision rules that identify packets received from a first host.

PAN also attempts to argue that “network device” must mean a single device.⁴ Motion at 11-12. Aside from the fact that Centripetal presented infringement of the claims where there was a single and multiple devices, as noted in Centripetal’s JMOL, PAN’s interpretation is incorrect

⁴ As this relates to the Cortex Products only, it only involves Claims 1 and 17 of the ’797 Patent and Claims 1 and 9 of the ’573 Patent.

as a matter of law because “a” is interpreted as meaning “one or more.” *KCJ Corp. v. Kinetic Concepts, Inc.*, 223 F.3d 1351, 1356 (Fed. Cir. 2000) (citations omitted); Dkt. No. 843 at 3-4; Trial Tr. 1470:3-15 (Dr. Villasenor admitting he was not applying the correct interpretation). PAN’s citation to *Salazar v. AT&T Mobility LLC* does not support PAN’s position because the Federal Circuit reaffirmed the general notion that “a” means “one or more.” *Salazar v. AT&T Mobility LLC*, 64 F.4th 1311, 1315 (Fed. Cir. 2023).

In addition, defining “a” as “one or more” in the claims of the Correlation Patents is entirely appropriate in light of *Salazar*. As demonstrated at trial, [REDACTED] [REDACTED] See, e.g., Trial Tr. 607:10-613:9, 654:13-658:13; PX-192, 400. Thus, when the claims refer to “the” network devices, it is referring to the same network devices or set of network devices that generated the log entries. Finally, PAN fails to address the fact that the underlying documents and source code shows that [REDACTED] [REDACTED] Trial Tr. 620:9-22; PX-361 at 9; see also PX-389 at 10. Accordingly, PAN fails to rebut the underlying evidence of infringement regardless of which interpretation is used.

PAN also disputes whether the NGFW products keep track of “elapsed time.” Motion at 12. Dr. Cole presented evidence (source code and PAN’s documents) that show that [REDACTED] [REDACTED] Trial Tr. 567:4-570:12; PX-393, 400. The underlying document notes that the “Elapsed Time” as the “Elapsed time of the session,” which common sense dictates is the end time minus the start time. PX-393 at 572. Dr. Villasenor failed to rebut

⁵ The asserted claims of the ’797 Patent do not require the network device to generate log entries.

PX-393, instead merely showing the same source code as Dr. Cole and stating he disagrees with Dr. Cole's analysis without any underlying evidence. Trial Tr. 1436:15-1439:3 (Dr. Villasenor failing to rebut PX-393 and merely disagreeing with Dr. Cole). In any case, a factual disagreement means that PAN's Motion should be denied.

C. PAN Directly Infringes Claim 8 of the '437 Patent

Centripetal proved that the NGFWs are deployed at the boundary to provide an interface such that all network traffic that traverses the boundary is inspected. *See, e.g.*, Trial Tr. 892:22-905:14, 909:1-916:2; PX-181, 194, 357, 359, 413, 424, 428, 446, 457, 461, 543.

PAN's argument that not all traffic is inspected that crosses the boundary when deployed in Layer 2 (i.e., a communication interface that does not have a network-layer address) is contradicted by its documents and the testimony presented at trial. Specifically, Dr. Mitzenmacher explained at great length that all traffic that crosses the boundary of the network is inspected. *See, e.g.*, Trial Tr. 877:2-21; 880:13-881:21; 884:6-886:12, 891:5-905:14, 909:12-931:9; PX-194, PX-357, PX-359, PX-390, PX-400 at 102, 135, 239-240, PX-413, PX-424, PX-435, PX-446, PX-460, PX-461; Zuk Tr. at 300:1-8; Ralston Tr. at 193:13-18; *see also* Trial Tr. 1009:8-1010:4, 1010:14-1011:5. In addition, when pressed on cross-examination, PAN's expert admitted that all traffic that crosses the boundary is inspected. *See, e.g.*, Trial Tr. 1485:4-1487:1 (NGFWs are deployed at boundary and provide security), 1487:7-16, 1488:24-1489:4 (when NGFWs operate in layer 2 mode, EDL rules are applied on valid packets crossing the boundary), 1503:6-9 (confirming there is not a single security breach based on using layer 2); *see also* Trial Tr. 1491:3-1491:6, 1492:1-1494:2. Indeed, the only evidence that PAN cited that traffic bypassed the NGFW was for packets that did not actually cross the boundary, but were instead rerouted to the internal network or dropped.

PAN appears to rely heavily on conclusory statements by Mr. Zuk and Dr. Villasenor that there is a security hole in the NGFW. But their testimony is not backed by any document, nor demonstrates that there is “no network path across a boundary of a network that bypasses the packet security gateways” because, as discussed above, all traffic that crosses the network boundary is inspected. Also, their testimony does not dispute the fact that when the NGFWs are deployed at the boundary, the network packets still arrive at the NGFWs, even with the layer 2 interfaces enabled on the NGFWs. *See* Motion at 12-14; Trial Tr. 1486:10-23; *see also* Trial Tr. 1485:4-1487:1, 1487:7-16, 1488:24-1489:4, 1491:3-1491:6, 1492:1-1494:2, 1503:6-9, 1358:15-16. The documents also confirmed that NGFWs (regardless of whether layer 2 interfaces are enabled) are deployed at the boundary providing an entire interface across a boundary of a network (e.g., in a high availability mode), so that there is no bypass. *See, e.g.*, PX-357, 359, 424, 435, 460, 461; *see also* Trial Tr. 892:22-905:14, 909:1-916:2. PAN’s arguments regarding Zero Trust and Dr. Mitzenmacher’s testimony make no sense as they essentially amount to bypassing NGFWs when layer 2 interfaces are enabled. Renewed JMOL at 13-14; *see* Trial Tr. 1009:8-1011:5, *citing* PX-194 (one would not buy “a firewall if you could just bypass the security of the firewall”). This type of arguments has been contradicted by numerous trial documents and testimony which consistently state that NGFWs inspect all traffic, which includes layer 2 traffic, that crosses the network boundary. *See, e.g.*, Trial Tr. 877:2-21; 880:13-881:21; 884:6-886:12, 891:5-905:14, 909:12-931:9; PX-194, PX-357, PX-359, PX-390, PX-400 at 102, 135, 239-240, PX-413, PX-424, PX-435, PX-446, PX-460, PX-461; Zuk Tr. at 300:1-8; Ralston Tr. at 193:13-18; *see also* Trial Tr. 1009:8-1010:4, 1010:14-1011:5 (*citing* PX-194).

D. PAN Infringes the Asserted Method Claims and Foreign Sales are Properly Included in the Royalty Base

As discussed in detail in Centripetal’s Opposition to PAN’s initial JMOL, incorporated

by reference, Centripetal presented substantial evidence that PAN infringes the asserted method claims and foreign sales are properly included in the royalty base. Dkt. No. 825 at 11-14. PAN mischaracterizes Centripetal's argument. The law does not require that damages related to domestic infringement be restricted to sales in the United States. *Carnegie Mellon Univ. v. Marvell Tech. Grp., Ltd.*, 807 F.3d 1283, 1306-07 (Fed. Cir. 2015) (territoriality is satisfied when any one of the domestic actions occurs in the U.S. even if other activities take place abroad). PAN does not dispute that the accused NGFWs are made in the U.S. and Centripetal further presented evidence that the relevant Accused Products infringe every step of the method claims "by developing, testing, and selling to its customers . . . products that practice the claimed methods" when used normally. Dkt. No. 825 at 13; *see* Trial Tr. 584:17-586:7, 586:15-598:15, 598:17-599:9; 600:12-605:21, 607:10-617:18, 617:19-618:4; 618:5-637:13, 637:14-645:23, 645:24-646:7, 646:8-659:24, 659:25-660:4, 660:5-20, 1738:3-1739:6; *see also* PX-180, 182, 185, 192, 196-200, 208, 209, 210, 340, 341, 342, 361, 364, 367, 368, 370, 388, 393, 394, 396, 400, 428. Foreign sales for such domestic infringement is appropriately included in the royalty base. *See R.R. Dynamics, Inc. v. A. Stucki Co.*, 727 F.2d 1506, 1519 (Fed. Cir. 1984) (royalty base for system and method claims properly included products made in U.S. for sale abroad).

E. PAN Infringes the Asserted Apparatus Claims

As explained in Centripetal's Opposition to PAN's initial JMOL, which Centripetal incorporates by reference, Centripetal presented substantial evidence that PAN infringes the asserted apparatus claims. Dkt. No. 825 at 14-15. Therefore, PAN is not entitled to JMOL of no infringement of the asserted apparatus claims by the accused product combinations.

F. Centripetal Presented Substantial Evidence to Include Foreign Sales in Damages

As explained in Centripetal's Opposition to PAN's initial JMOL, incorporated by

reference here, Centripetal demonstrated that PAN sells the infringing combinations globally from the U.S. as integrated solutions. Dkt. No. 825 at 15-16; *see, e.g.*, Trial Tr. 1017:25-1018:6 (Lee Tr. at 83:02-83:19 ([REDACTED]

[REDACTED] Centripetal presented evidence that [REDACTED]

[REDACTED] Trial Tr. 865:18-22 (Ralston Tr. at 233:5-13); Trial Tr. (Cole) 646:15-20, 652:8-16, 659:25-660:4, 660:10-661:9, 809:14-19; Trial Tr. (Mitzenmacher) 874:10-875:7, 879:23-880:12, 881:25-882:4, 882:21-883:11, 911:10-18. Centripetal also presented evidence that [REDACTED]

[REDACTED] Trial Tr. 466:13-23 (Zuk Tr. at 281:11-282:13, 283:9-23, 285:11-286:10, 293:18-295:12); Trial Tr. (Cole) 611:12-20, 618:5-13, 656:9-657:15.

G. Centripetal Presented Substantial Evidence to Support Reasonable Royalties

As explained in Centripetal's Opposition to PAN's initial JMOL, incorporated by reference, Centripetal presented substantial evidence that it is entitled to damages from PAN's infringement of the Asserted Claims. Dkt. No. 825 at 16-20.

1. The Keysight License is comparable to the hypothetical negotiation for a reasonable royalty of damages.

Centripetal presented substantial evidence of the comparability of the Keysight License. Mr. Malackowski testified that the terms of the Keysight License are comparable to the hypothetical negotiation in this matter. *See Bio-Rad Laby's, Inc. v. 10X Genomics Inc.*, 967 F.3d 1353, 1376-77 (Fed. Cir. 2020) (upholding Mr. Malackowski's comparable license apportionment methodology); *see also Vectura Ltd. v. Glaxosmithkline LLC*, 981 F.3d 1030, 1041 (Fed. Cir. 2020) (upholding expert's adoption of comparable license's royalty rate and

royalty base without further apportionment). Mr. Malackowski testified there was technical comparability because all of the Asserted Patents had common specifications with patents asserted against Keysight, and also Dr. Cole, Centripetal's technical expert, provided opinions regarding technical comparability. *See, e.g.*, Trial Tr. 1103:5-18; 1095:25-1096:03 (pointing to Dr. Cole's analysis), 1101:19-1103:18, 1189:21-1190:13, 1190:23-1191:14, 1111:02-1111:015, 1231:19-1232:21; Trial Tr. (Cole) 663:14-680:1.

He also identified the important similarities between Keysight and PAN that also made the Keysight License economically comparable, such as: (1) they are both publicly traded companies based in the U.S. with billions of dollars in annual revenues; (2) they operate in a similar field of technology, i.e. network security; (3) their products share similarities such as dynamic packet analysis and correlation; (4) they are seeking the same enterprise-wide customers for security purposes; (5) their business model is the same in that they spend considerable amounts of money acquiring companies; (6) they were both initially viewed by Centripetal as potential partners prior to becoming competitive; and (7) the Keysight License involves a royalty on revenues, similar to the hypothetical negotiation. *See, e.g.*, Trial Tr. 1100:9-1105:11, 1109:2-1110:25 (PAN acquired Demisto); PX-699; 1096:10-1099:15; PX-589.

Mr. Malackowski testified that the evidence showed both Keysight and PAN are competitive to Centripetal. Trial Tr. 1114:12-1121:7; PX-713, 714, 715, 693. He also testified that the relative value of the Asserted Patents to PAN is greater in comparison to the patents asserted against Keysight/Ixia because (1) PAN's main line of business is firewalls while Keysight's main line of business is network equipment; (2) PAN is a more notable player in the security market whereas Keysight is a less notable player; (3) the technology provided through the use of the Asserted Patents are core to PAN's business whereas they are not core to

Keysight's business. Trial Tr. 1101:19-1103:2, 1228:4-1130:11.

Contrary to PAN's argument, Mr. Malackowski also accounted for the differences between the Keysight License and the hypothetical negotiation, including that the Keysight License: (1) was executed in the middle of a lawsuit, after Centripetal presented its case-in-chief; (2) included a license to Centripetal's patent portfolio and a covenant not to sue; (3) was [REDACTED] [REDACTED] and (4) included [REDACTED] See Trial Tr. 1095:14-1097:13; 1103:19-1104:26; *see also Prism Techs. LLC v. Sprint Spectrum L.P.*, 849 F.3d 1360, 1369 (Fed. Cir. 2017) (settlement agreements seem "especially probative if reached after the litigation was far enough along that the issue was already well explored and well tested.") (citation omitted); *see also* 1113:8-1131:4, 1128:4-1133:4, 1230:6-1231:18.

The evidence showed that the four PAN patent purchase agreements, which PAN relies on, are not technically nor economically comparable to the hypothetical negotiation because they are not related to computer security, they predate the hypothetical negotiation by five to nine years, there was a non-competitive relationship between the buyer and seller, the patents acquired were not used by PAN, and they contained [REDACTED] [REDACTED] See, e.g., Trial Tr. 270:17-275:19, 1078:20-1083:3, 1086:11-1087:15, 1089:24-1091:15, 1094:7-1095:4, 1712:19-1713:14. There was no evidence presented about the specifics of the negotiations of the PAN patent purchase agreements, and how the purchase amounts were reached. Trial Tr. 1717:16-1718:20. PAN also presented no evidence that the parties to the purchase agreements, Verizon, Aspen Networks, and HP, are comparable to Centripetal. Trial Tr. (Bakewell) 1719:1-1720:21 (testifying that Centripetal's business is not similar to Verizon, Aspen, or HP's businesses). PAN's damages expert admitted that the evidence he relied on to

show that PAN and Centripetal are not competitive predates the hypothetical negotiation by three to seven years. Trial Tr. 1725:15-1726:5. Thus, the substantial evidence supported the Keysight License was the most comparable to the hypothetical negotiation.

2. Centripetal presented a reasonable royalty properly apportioned to the value of the inventions of the Asserted Patents in the infringing combinations of Accused Products.

Mr. Malackowski apportioned to the royalty base by including only Accused Products which were sold during the damages period which begins on March 12, 2021 through April 2023, the last date of sales data produced by PAN. Trial Tr. 1126:19-1128:3. He ensured that there was no double counting of revenues. Trial Tr. 1133:05-1133:20 (no double counting the same sale for multiple patents). Specifically, Mr. Malackowski's testimony was limited to only the infringing product combinations: the NGFWs with ACE for the '903 Patent; NGFWs with ACE, Cortex XDR in combination with Cortex XSOAR, and Cortex XSIAM for the '797 Patent; NGFWs with ACE, NGFWs without ACE in combination with Cortex XDR and Cortex XSOAR, and NGFWs without ACE in combination with Cortex XSIAM for the '573 Patent; and Panorama in combination with all NGFWs for the '437 Patent. Trial Tr. 1135:19-1136:21; demonstrative of PX-670. Contrary to PAN's argument, while Mr. Malackowski presented the royalty base for each Accused Product, it was limited to the foregoing specific infringing combinations for each Asserted Patent, such that there was no issue with respect to his damages presentation. *Id.*; Malackowski Demon. Slide 47. There is no law that PAN cites requiring Mr. Malackowski to have presented his damages numbers on a more granular level where he appropriately assumed infringement of all the Asserted Patents.

As discussed above, Mr. Malackowski further apportioned sales to the value of the Asserted Patents by utilizing the royalty rates in the comparable Keysight License, opining that a reasonable royalty rate is [REDACTED]. Trial Tr. 1129:11-1130:11 [REDACTED]

964 at Exhibit 3.1-U (C) *see also* Trial Tr. (Cole) 663:14-680:1; *see also* *Elbit Sys. Land & C4I Ltd. v. Hughes Network Sys., LLC*, 927 F.3d 1292, 1301 (Fed. Cir. 2019) (comparable license “analysis could reasonably be found to incorporate the required apportionment”); *see also* *Commw. Sci. & Indus. Rsch. Org. v. Cisco Sys., Inc.*, 809 F.3d 1295, 1303 (Fed. Cir. 2015) (upholding “built in apportionment” methodology). The evidence showed that non-accused components in the Accused Products were commodity components and of relatively little value, as compared to the infringing components. Trial Tr. 663:17-666:1, 959:20-960:8, 1130:12-22.

Based on the foregoing citations, Mr. Malackowski's opinion was substantially supported with evidence to support his application of the apportioned royalty rates from the Keysight license. Mr. Malackowski also opined, *inter alia*, that the [REDACTED] royalty rate attributable to nine of 11 third-party valuations of technologies acquired by PAN between 2017 and December 2020 support the reasonableness of his royalty rate calculations because the third-party valuations were performed by neutral experts and involved technologies that relate to the Accused Product technologies. Trial Tr. 1106:22-1111:21; Slide 27, 28, and 30; PX-669. Mr. Malackowski testified that the [REDACTED] royalty rate cited in the Demisto acquisition is especially probative because it is the infringing technology that PAN integrated into its Cortex XSOAR product and the acquisition was completed less than a year before the hypothetical negotiation. Trial Tr. 1108:10-1109:25; PX-669.

Centripetal presented substantial evidence of damages properly apportioned to the footprint of the Asserted Patents, for each of the combinations of accused products.

III. CONCLUSION

For the foregoing reasons, Centripetal respectfully requests that the Court deny PAN's Renewed and Additional Motion for Judgment as a Matter of Law.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on February 14, 2024, I electronically filed the foregoing with the Clerk of the Court using the CM/ECF system, which will automatically send notification of filing electronic to all counsel of record.

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